

108.03 PROSECUTION OF WORK

108.03.1 General

Begin obtaining all air quality, water quality and storm water runoff permits, approval of reclamation plans, and archaeological and historical clearances immediately upon receipt of the notice of contract award letter from the Department. Furnish the completed applications to secure permits, approvals or clearances as they are submitted to the respective agency. Furnish approved permits, reclamation plans and clearances necessary to complete the work in conformance with all federal, state and contract requirements.

The Department will reimburse all reasonable costs incurred in securing the permits, approvals and clearances if the Department does not execute the contract for reasons outside its control.

A pre-construction conference will be held on a mutually agreed date between the Contractor, Department and other parties interested in the work before work within the project limits begins no later than 20 calendar days after the Notice to Proceed date. The Contractor's superintendent in charge of the project must attend the conference. Encourage subcontractors to attend. No payments will be made on the contract until the pre-construction conference has been held.

Obtain written approval before starting night work. Provide work area flood lighting for night work and do not rely solely on equipment lights. Night work approval may be rescinded at any time.

Suspending and resuming work on all or a part of the contract will be by Subsection 105.01.

Work may be suspended on working day contracts for unsuitable weather or for other conditions that are detrimental to the work accuracy and quality. Prevent damage and repair damaged work that was not protected during the suspension at Contractor expense. No time extensions will be approved for work to correct non-protected work.

Store materials to protect against damage and without obstructing, endangering or impeding traffic.

Do not allow water to pond on the roadway or within the construction limits, excluding environmental protective devices. Open ditches and shoulder drains, and take other actions to protect the public and the work.

The Department does not authorize project suspension by the Contractor and time will be charged during unauthorized project suspensions. If the Contractor suspends the project, provide written notification of the suspension to the Project Manager 7 calendar days before the suspension. The Contractor is responsible for all maintenance required during unauthorized suspensions and for all work and materials required due to the suspension.

108.03.2 Project Schedules

Furnish a WN that details the work and time (working days, calendar days or completion date) to complete the contract. The initial schedule must show that the work will be completed in the time frame specified in the contract.

A. ASC Schedules. For projects not subject to Subsection 108.03.2(B) requirements,

submit a schedule in accordance with the Table of Contractor Submittals. No other work, except obtaining permits, may begin until the schedule requirements have been met. No payments will be made on the contract until the submitted schedule is reviewed.

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Comment [JMac1]: Timing has been modified to state "submit schedule 7 calendar days before the pre-construction conference" this will allow time for review of schedules, discussion of schedule at the Pre-Con and to avoid the situations where Contractors wish to start work the day after a PreCon.

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The Contractor may use a CPM schedule as the ASC if it meets the requirements described in Subsection 108.03.2(A) herein and results in no additional cost to the Department.

1. Include in the ASC:

- a. A bar chart chronologically sequenced and to time scale showing the following:
 - 1) All work activities with a completion duration of 5 or more working days. (For this requirement, working days does not exclude the period from November 16th through April 15th.)
 - 2) Any work activity that has an impact on completion of the project.
- b. The relationship of each work activity listed in Subsection 108.03.2(A)(1)(a) to other work activities, permits, plans, submittals and approvals required to complete the project.
- c. Work activity durations by working days or calendar days as appropriate. Indicate non-working periods exceeding 3 days on each activity bar.

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2. Include in the WN:

- a. The proposed work process sequence describing the relationship of the work activities listed in Subsection 108.03.2(A)(1) required to complete the contract, including shop drawing submittals, permits (including estimated maximum waiting periods for all required permits), fabrication and delivery activities.
- b. A detailed description and the progress time of each work activity listed in Subsection 108.03.2(A)(1) measured by working day or calendar day, as appropriate.
- c. A detailed description of the ASC, including holidays, planned workdays per week, number of shifts per day, hours per shift, size of work crews and resources used.
- d. Adjusts to activity durations and production rates to account for weather.

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Submit an updated ASC and WN every month in which work is performed, one week before the end of the project's monthly estimate cycle. The ASC and WN should show current progress and all revisions or modifications that reflect changes in the method or manner of the work, specification changes, extra work, changes in duration, changes in shifts, work crews or resources. If the work is not proceeding consistently with the Contractor's most recently reviewed ASC and WN, the Project Manager may require that the Contractor submit 2 copies of an updated ASC and WN that accurately reflect the Contractor's progress, resource allocation for the project, and revised schedule. Submit the updated ASC and WN within 1 working day of the Project Manager's request. Ensure that the WN and ASC submitted meet the above requirements and accurately reflect the work progress.

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Any delay in beginning or prosecuting work that is caused by the Contractor's failure to provide an ASC or WN when and as required is solely the responsibility of the Contractor, and is not an excusable delay.

Prosecute the work with the resources required to complete the contract within the time shown in the Contractor's updated ASC and WN.

The Department may withhold 10% of each monthly progress estimate for failure to submit an initial or updated ASC or WN on time and in the manner required. Payment

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withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of the required ASC and WN. The Project Manager's review does not attest to the validity of the ASC or WN.

B. CPM Scheduling. Develop, maintain and provide a detailed time-scaled computer generated progress schedule using the critical path method that is compatible with Primavera P6 or other Primavera product which generates a .xer file type.

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Submit a schedule in accordance with the Table of Contractor Submittals. No other work, except obtaining permits, may begin until the schedule requirements have been met. No payments will be made on the contract until the submitted schedule is reviewed.

Schedule all contract work including that of subcontractors, vendors and suppliers. The initial schedule must show that the work will be completed in the time frame specified in the contract.

Prepare the initial CPM schedule as an Activity On Node (AON) or Precedence Diagramming Method (PDM).

The Project Manager may withhold 10% of each monthly progress estimate for failure to submit an original or updated CPM schedule on time and in the manner required. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of the required CPM schedule. The Project Manager's approval of the CPM schedule does not attest to the validity of the Contractor's assumptions, logic constraints, dependency relationships, resource allocations, labor and equipment or other schedule aspects.

1. Preparation and Submission of Schedule. Prepare an initial schedule and submit an electronic file compatible with Primavera P6 or other Primavera product which generates a .xer file type. Once an accepted baseline schedule is submitted, furnish one ANSI D (24-inch by 36-inch) paper copy. Submit all items listed in Subsection 108.03.3(C).

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Attend a meeting scheduled by the Project Manager within 10 calendar days of the Project Manager's receipt of the CPM schedule to review, correct or adjust the CPM schedule if required.

Make all schedule adjustments and corrections discussed at the meeting and re-submit the revised schedule within 15 calendar days after the meeting. Plan and execute the work to meet project milestones and completion dates.

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2. Initial Schedule Requirements. Include the requirements listed in Subsection 108.03.3(C) and the following:

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- a. Total float sort; responsibility/early start sort; area/early start sort;
- b. 60-day look ahead bar charts by early start; and
- c. Logic diagram having a maximum 100 activities for each ANSI D (24-inch by 36-inch) size sheet. Ensure each sheet includes project number, page number, title, match data or diagram correlation and key to identify all components used in the diagram.

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3. Schedule Requirements. Submit schedules that include:

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- a. Activity identification numbers;
- b. Project milestones;
- c. Activity descriptions;
- d. Appropriate relationships;

- e. Activity durations of no more than 20 days. Submit activity manpower, equipment, unit quantities and production rates to the Project Manager for review;
- f. Procurement of permits;
- g. Material procurement separated into at least two activities, fabrication and delivery. Include time for delivering all submittals and Department review of working drawing submittals as separate items in the schedule logic for all items requiring submittal, review and approval;
- h. Activities coded to reflect the party performing each activity (only one party performs each activity) including subcontractors and suppliers and the area/location of each activity;
- i. Work days per week, holidays, number of shifts per day, hours per shift and major equipment to be used;
- j. Phasing (staging) details, if the work has phasing or is to be performed in phases;
- k. A WN which describes the following:
- Anticipated work in an orderly sequence of the construction phasing;
 - Activity relationships;
 - Anticipated problems; and
 - Anticipated project completion dates, in a detailed description.
- Narratives that are a listing of the work will not be accepted. Include written narratives with each submission;
- l. Calendars, including weekends, holidays, or other Contractor non-work periods. Use project specific calendars. All activities must be identified by entry of their appropriate calendar; and
- m. Adjustments to activity durations and production rates to account for weather. Use only contractual constraints in the schedule logic.
- Float is defined as the amount of time between when an activity “can start” and when it “must start”. Total float is float shared with all other activities and is defined as the amount of time an activity can be delayed without affecting the overall time of project completion. Float is a shared commodity, not for the exclusive use or financial benefit of either party. Either party has the full use of float until it is depleted.
- The critical path is defined as the longest continuous sequence of activities through the network schedule that establishes the minimum overall project duration. The submitted activity sequence and durations must generate a CPM schedule having a critical path with zero float. Keep multiple critical paths and near-critical paths to a minimum. Describe multiple critical paths and near-critical paths with thorough and reasonable justification in the written narrative.
- Show the sequence and interdependence of all activities required for the complete performance of all items of work under this contract, including acquiring all the environmental permits. Show all network “dummies” on the diagram.
- The Department reserves the right to limit the number of activities on the schedule to between 50 and 1000 activities.
- Describe the activities so that the work is identifiable and the progress on each activity is measurable.

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A detailed description and the progress time of each work activity and appropriate relationships listed in the CPM schedule, measured by working day or calendar day, as appropriate.

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- 4. Schedule Updates and Progress Payments.** Schedule and attend monthly project progress meetings to compare the schedule to the actual finish dates of completed activities, the remaining duration of uncompleted activities and the proposed logic and/or time estimate revisions. Provide the status of activities at these meetings, and the schedule updates based on this information, once it has been verified.

Each month of the project, one week before the end of the project's monthly estimate cycle, submit an electronic file using Primavera P6 or other Primavera product which generates a .xer file type and a .PDF file containing:

- a. Total float sort;
- b. A narrative report describing the critical path, logic revisions or modifications to the schedule, including, but not limited to: changes in the method or manner of the work, changes in specifications, extra work, changes in duration, etc.; and
- c. Any revised activity on node diagrams for the following:
 - 1) Delay in the completion of any critical activity;
 - 2) Actual prosecution of the work that is different than that represented on the CPM schedule; and
 - 3) The addition, deletion, or revision of activities required by contract modification or logic revisions.

Monthly schedule updates must reflect the previous month's actual work. The contract time will be adjusted only as specified in the contract. Furnish documentation to support requests for time extensions for milestone dates or the contract completion date.

The Project Manager may suspend work under Subsection 105.01(A) if the WN or project schedule does not accurately reflect the actual progress of the work; the suspension may continue until an accurate WN and project schedule is submitted.

C. CPM Scheduling Method of Measurement

CPM schedule is measured by the lump sum. Other scheduling requirements are not measured for payment.

D. CPM Scheduling Basis of Payment

Payment for all costs associated with CPM scheduling is included in the lump sum contract unit price for CPM scheduling. Payment for all costs associated with other scheduling requirements is included in the payment for other items of work.

Failure to submit a CPM schedule or schedule update to the Project Manager within 2 calendar days of its due date will result in a 10% deduct of the CPM schedule bid item for each update that is late.

Failure to submit a revised CPM schedule as specified may also result in withholding 10% of each monthly progress estimate. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of the required schedule.

Partial payments for CPM scheduling will be made based on the lump sum contract unit price as follows:

1. 50% when the initial schedule is finalized.
2. 75% when the overall project is 50% complete.
3. 100% when all updates have been submitted.

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Comment [JMac2]: PDF file is useful to EPM while schedule is with the DOE for scrubbing. The EPM can review the schedule for conflicts if DOE is unavailable to view the .XER file for a period of time.

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Comment [JMac3]: place here or in General?

Comment [JMac4]: Paul Rieger Comment: suspension needs to address both ASC and CPM schedules. Place in General.

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